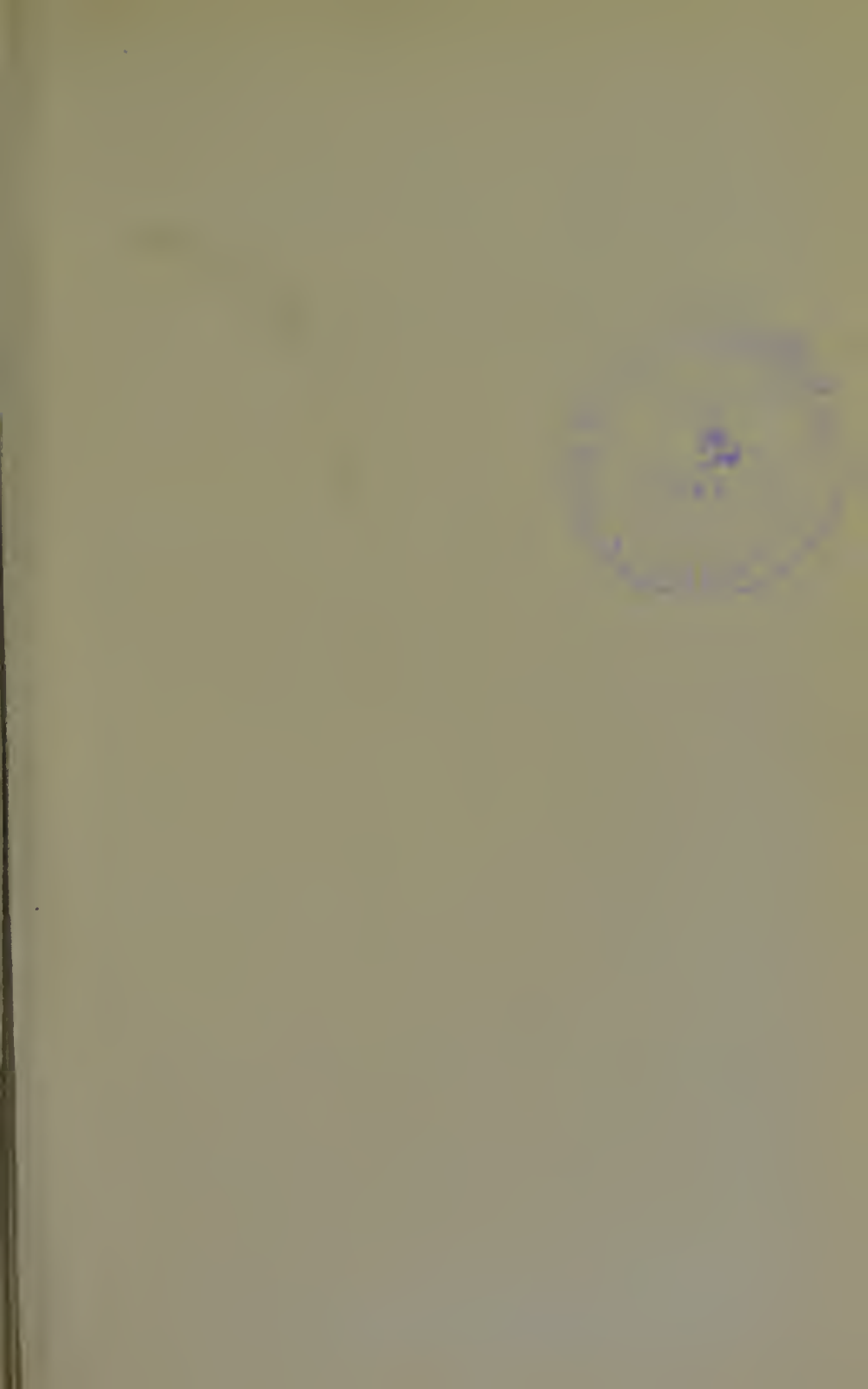


The First Operation under Ether
in Europe:

The Story of Three Days.

With the Writer's Compliments.







ROBERT LISTON, aged 30

(From a chalk drawing in possession of Raymond Johnson, F.R.C.S.).

THE FIRST OPERATION UNDER ETHER IN EUROPE—THE STORY OF THREE DAYS.

"Mihi mandatum ex memoria animæ ut temporis ruinas restituam."

"Semper sussurrat uemoria sed aliquando clamat."

— — —

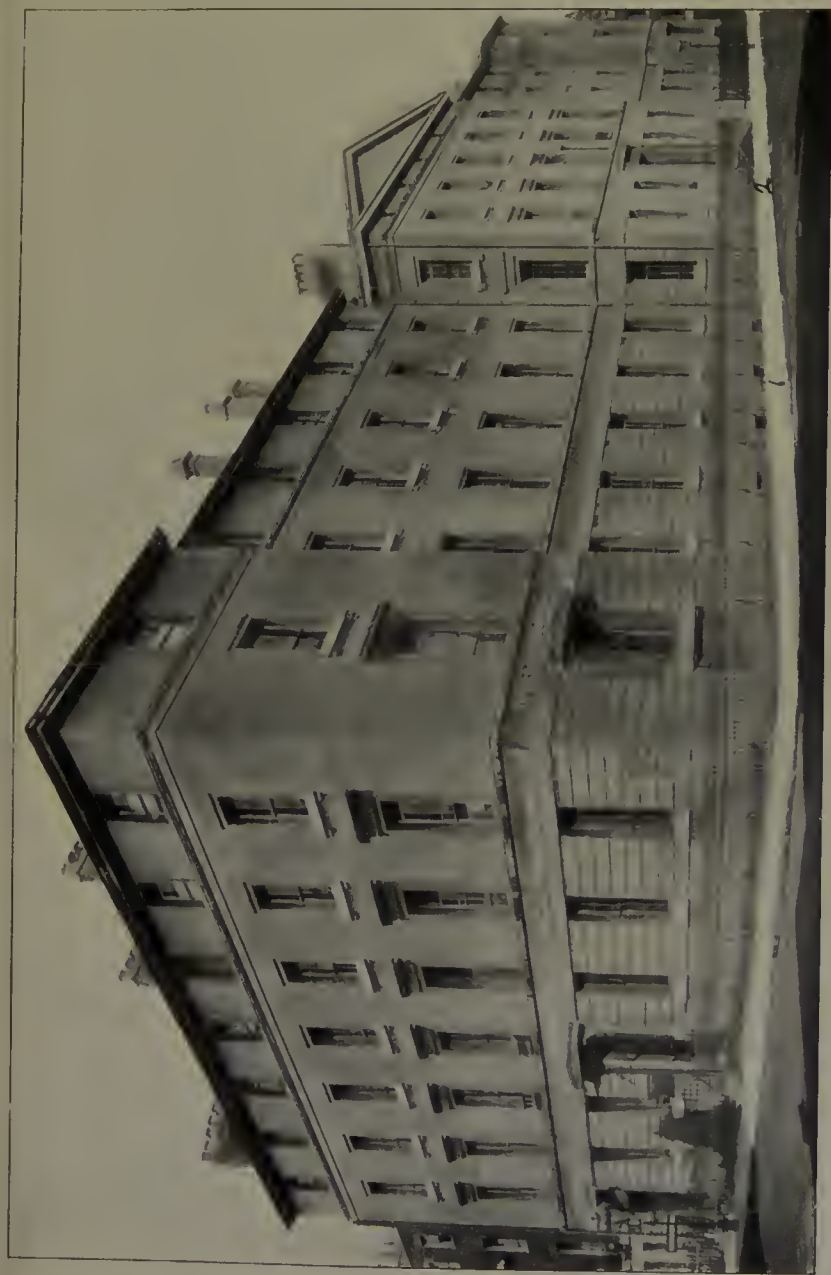
It was a little after midday on Saturday, December 19, 1846—according to Surtees one of the worst days of the worst hunting season on record—when Robert Liston came in to his friend Peter Squire, the well-known chemist in Oxford Street, and, pulling out a letter, said to him, "Just read that." The latter, a middle-aged, grey-haired man, glancing through the pages, replied, "This is most interesting and important." "Yes, and you must fix me up something so that we can have it on Monday at the hospital: I have an amputation of the thigh to do, and we will try it then"; and, hastily bidding him farewell, the surgeon, great not only in reputation but in stature, hurried off on his busy round. The letter was from Dr. Francis Boott, a general practitioner, living in Gower Street, in whose house that morning a firmly fixed molar had been extracted from a young lady by Mr. Robinson, the dentist, whilst she had been insensible under ether. Dr. Boott had shortly before received from Dr. Bigelow an enthusiastic account, dated November 28, 1846,

of the success of ether anaesthesia in the Massachusetts General Hospital, where it had been introduced by Morton, the dentist, its discoverer, to Dr. Warren, who had operated on patients under its influence. As Peter Squire was thinking the matter over, his nephew William, afterwards Dr. Wm.



Peter Squire, the well-known chemist of Oxford Street, who made the first ether inhaler. (From contemporary portrait lent by his son.)

Squire, M.D., F.R.C.P., came in, and, after talking about it, said, "Why not try it on me first?" "Come in to-morrow, and we will see what can be done," was the reply. To-morrow, Sunday, came and William Squire was there early. His uncle had fitted together a Nooth's apparatus and packed the upper detachable cylinder with sponge, and to the exit



Old University College Hospital. Fig. 1 opposite to Ward 1. Fig. 2 shows room of H.S. to Liston.
(From photograph lent by Messrs. H. K. Lewis.)

a flexible tube was attached with an ordinary bronchial inhaler mouthpiece. This afterwards had an expiratory valve attached. Pouring some sulphuric ether on the sponges, he said, "Lie down on the couch there. Take the mouthpiece between the teeth, close the lips over it, and hold the nose firmly." The young man did as he was bid and soon began to cough, for he was practically inhaling ether as if he had applied a Clover's apparatus turned on to the full, but without the bag attachment. After a time, however, he became more accustomed to the pungent vapour, and finally was completely anesthetized. When he recovered, his uncle, discussing the matter, said he would be wanted to help at the hospital next day in administering the ether.

In the hospital lay Frederick Churchill, a butler, aged 36, for whom these momentous preparations had been made. He had been admitted on Monday, November 23, 1846, for a discharging sinus from a cavity in the outer side of the head of the tibia. This cavity had been opened before admission, and a number of irregularly shaped laminated bodies removed. The mischief had originally been caused by a fall on the part. On November 25 "Professor Liston examined the sinus with a probe, and an incision was made opposite to the tibio-peroneal articulation, and, the finger being passed down, bare bone was distinctly felt on the outer head of the tibia. The wound was plugged, but prior there was an attempt made to ascertain whether the diseased portions of bone were loose; this was found not to be the case. Water dressing ordered and complete rest." Then the notes go on to give at length a singularly accurate picture of a septicæmia induced by the above examination, with fever, night sweats, patchy pneumonia, limb startings, and all the miserable concomitants of infection with the germs attached to the unsterilized hand and instruments of the finest and cleverest surgeon of his day, who had done everything well and correctly according to the best know-

ledge then available. At last the poor patient was told he must lose his limb to save his life, and he gave his consent, glad to be rid of his torment.

December 21: The scene changes to the operating theatre of the old hospital so well known to the past generations of students. When the writer first knew it, it was practically in the same state as in Liston's time. Two sliding doors separated it from the main corridor of



Early portrait of William Squire, M.D., F.R.C.P. (From photo lent by his son, J. Edward Squire, C.B., M.D., F.R.C.P.)

the ground floor of the hospital. They were exactly opposite the east door, where the present entrance now is, and almost on the spot where the bust of our new founder stands. When one entered, on the right was a small wash-hand basin, on the left the instrument cupboard, which still held a good many of Liston's instruments. In the middle was Liston's table, screwed to the floor by angle-irons. There was also a low, sturdy wooden chair which was used

by the surgeons chiefly for cases of piles and lateral lithotomy, or to hold instruments. Then at the foot of the benches came the seat on which sat the staff and visitors, and now and then the senior house surgeon. Above and extending round this were the railings which separated the rising tiers of benches for the students, the lowest one being for

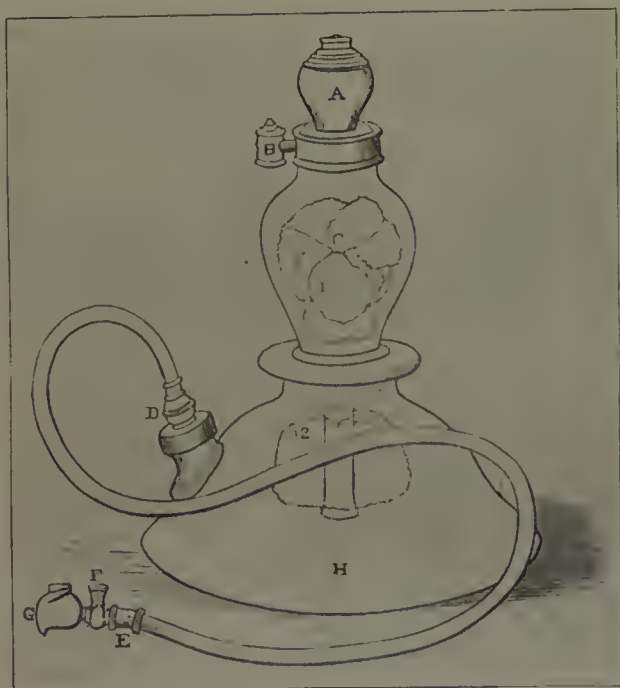


Railings of old operating theatre, University College Hospital, now at The Well House, Appledore, Kent.

the dressers and junior staff. These railings are now in the writer's garden at Appledore, in Kent, and, with the exception of the table and chair, are, he believes, all that is left of the old hospital. At the foot of the table was a wooden tray filled with sawdust. In front of the instrument cupboard was a small four-legged table; on this the instrument porter put out what was wanted for the day, and to him used to go the anxious examinees to find out the different requirements

for different operations, just before their visit to the Royal College of Surgeons.

To return to our story. It is 1 o'clock ; there is much bustling to and fro, for it has got about that Liston is going to try something absolutely new at his operations. It is even said that the secret of anæsthesia has been discovered.



Peter Squire's first ether inhaler, as finally modified.
(From plate lent by his son, Peter W. Squire.)

The theatre has already become crowded ; soon it is to be crammed to the uttermost. Presently in comes Wm. Squire. He moves quietly about, a small table is brought in, and the strange-looking chemical apparatus placed upon it. The flexible tube is adjusted so as to reach the middle of the pillow on the door end of the table, and the students are conscious of that penetrating odour, now so common, then

only known in mixtures for bronchitis or when given in small doses for inhaling in asthma, &c. "Is there anyone here who would like to try it?" says Squire. No one replies from the crowded benches. "What, no one!" and looking round he sees one of the hospital porters, Sheldrake, a big muscular fellow. "Come on, man, let's see if we can put you under."



Liston's operating table and knives, with their case. (From a photograph lent by Mr. C. J. S. Thompson.)

So the porter lies down on the table and sucks away at the tube, young Squire holding his nose. But after a minute or two, Sheldrake jumps up off the table, quite intoxicated and shouting and making a tremendous to-do, climbs on to the railings and plunges into the mass of students, who are like a flock of sheep when a dog chases it, separating right and left, and letting him nearly reach the door. Just in time

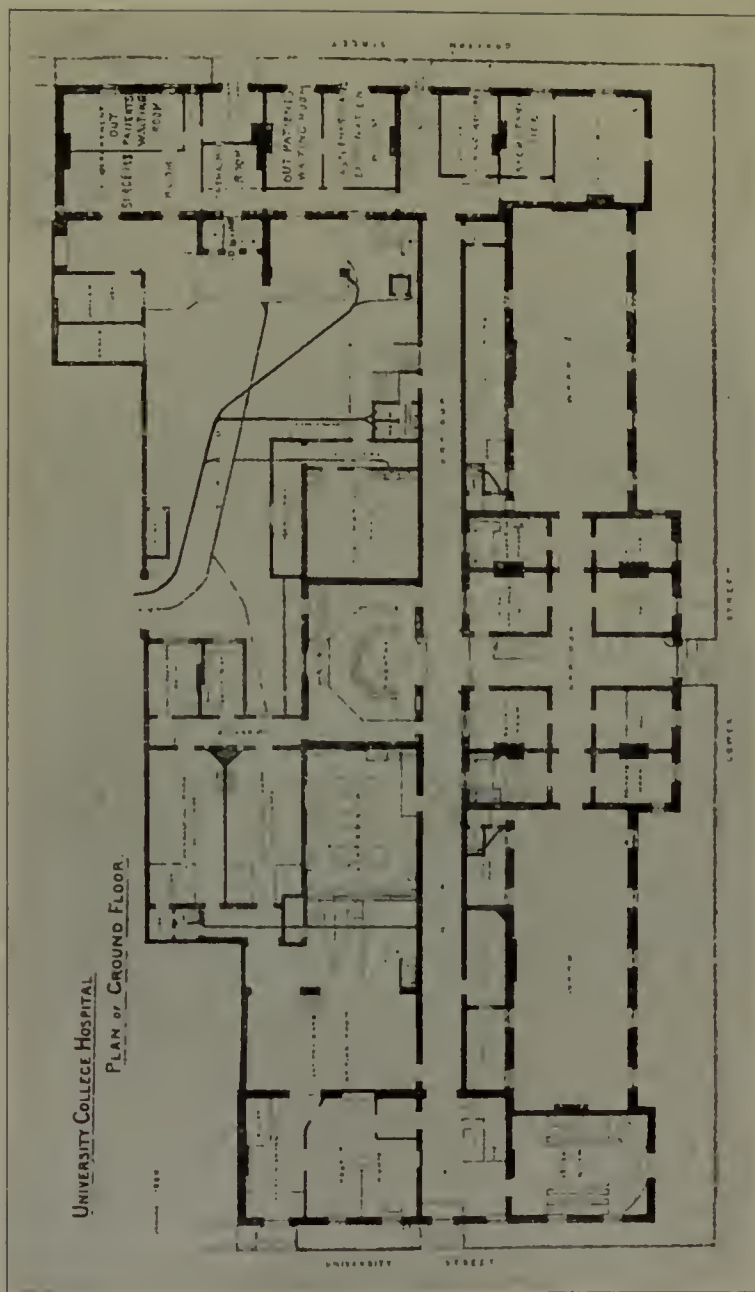
they close on him, and, laying hold firmly, keep him till he has quieted down, and he then goes off by the stairs, vowing he will have no more of the d—d stuff. Then things settle down to the strained waiting which goes before any great event. Wm. Squire rearranges the apparatus, the table is put straight again, not before one had seen, when the mat-



Robert Liston's instrument cabinet, in possession of his son, Colonel Liston.

trell fell off, the keyhole apertures on either side of the planks, where the straps go through which are used to hold down the unfortunates who have to endure the agony of the knife. The well of the theatre is now almost full; it is 2.15 p.m. A firm footstep is heard, and Robert Liston enters—that magnificent figure of a man, 6 ft. 2 in. in height, with a most

UNIVERSITY COLLEGE HOSPITAL
PLAN OF GROUND FLOOR.



Ground plan of old University College Hospital, showing operating theatre and Ward I.

commanding expression of countenance. He nods quietly to Squire, and, turning round to the packed crowd of on-lookers, students, colleagues, old students, and many of the neighbouring practitioners, says somewhat drily, "We are going to try a Yankee dodge to-day, gentlemen, for making men insensible." He then takes from a long narrow case one of the straight amputating knives of his own invention. It is evidently a favourite instrument, for on the handle are little notches showing the number of times he had used it before. His house-surgeon, Ransome, puts the saw, two or three tenacula and the artery forceps, named after the operator, on to a chair close by, and covers them with a towel, then threads a wisp of well-waxed hemp ligatures through his own buttonhole. "Ready, Mr. Ransome?" "Yes, sir." "Then have him brought in." "Run along, Palmer," and Edward Palmer, the dresser, goes quickly through the sliding doors across the main passage towards the east door of the hospital, and, turning sharply to the right, enters Ward 1. The porters are waiting just outside, and the patient is carried in on the stretcher and laid on the table. The tube is put into his mouth, Wm. Squire holds it and the patient's nostrils. A couple of dressers stand by to hold the patient if necessary, but he never moves, and blows and gurgles away quite quietly. Liston stands by, trying the edge of his knife against his thumbnail, and the tension increases; the patient's breathing gets deeper, more ether is dropped on to the sponge. Wm. Squire looks at Liston and says, "I think he'll do, sir." The tube is removed and a handkerchief laid over the patient's face. "Take the artery, Mr. Cadge," cries Liston. Ransome, the house surgeon, holds the limb. "Now, gentlemen, time me," he says to the students. A score of watches are pulled out in reply. The huge left hand grasps the thigh, a thrust of the long straight knife, two or three rapid sawing movements, and the upper flap is made; under go his fingers, and the flap is held back;

another thrust, and the point of the knife comes out in the angle of the upper flap ; two or three more lightning-like movements, and the lower flap is cut, under goes the great thumb and holds it back also ; a touch or two of the point, and the dresser, holding the saw by its end, yields it to the surgeon and takes the knife in return—half a dozen strokes, and Ransome places the limb in the sawdust. "Twenty-eight seconds," says Wm. Squire. "Twenty-seven," says Buckell, a student still living. "Twenty-six," echoes yellow-haired Russell Reynolds. "Twenty-five seconds, sir," says proud Edward Palmer, the dresser, to his surgeon, who smiles in reply. The femoral artery is taken up on a tenaculum and tied with two stout ligatures, and five or six more vessels with the bow forceps and single thread, a strip of wet lint put between the flaps and the stump raised. Then the handkerchief is removed from the patient's face and, trying to raise himself, he says, "When are you going to begin? Take me back, I can't have it done!" He is shown the elevated stump, drops back and weeps a little ; then the porters come in and he is taken back to bed. Five minutes have elapsed since he left it. As he goes out, Liston turns again to his audience, so excited that he almost stammers and hesitates, and exclaims, "This Yankee dodge, gentleman, beats mesmerism hollow."

Let us follow the patient for a little, and we cannot do better than again have recourse to the notes.—"Not the slightest groan was heard from the patient, nor was the countenance at all expressive of pain. This was the first capital operation which had been performed under the narcotizing influence of ether vapour, and it was perfectly successful. The patient did not know that the limb was removed, and declares distinctly that he has no remembrance of having suffered any pain either in the theatre or in coming away. There was a great sensation of cold, and a desire to be covered up expressed as he was

Dec 1.8

St. Churchill Continued from page 219.

Mr. Harvey has decided to remove the limb today at 2 1/2 minutes past 2 P.M. The patient was taken into the operating Theatre - Prior to the operation, ether vapour was given to breathe for between 2 and 3 minutes. The effect of this was so far to stupify as to cause complete insensibility to pain although consciousness was retained and questions were answered - Professor Liston finished the complete removal of the limb in 25 seconds - not the slightest groan was heard from the patient nor was the countenance at all expressive of pain.

This is the first capital operation which has been performed in this country under the non-tortuous influence of ether vapour, and it was perfectly successful.

The patient did not know that the limb was removed and he has no remembrance of having suffered any pain either in the Theatre or in coming away. There was a faint sensation of cold and a desire to be covered up expressed as he was being removed back and this is remembered now.

One hour after the operation I was some minutes standing by his side before any pain was felt - There is a remembrance of 'moving like a wheel, some words he said'.

St. 10th. much pain is now felt in the stump, the pain is 90

7 P.M. The flaps were now brought together and two more arteries secured, one of which was the small artery running in the centre of the distal cuticle nerve making 10 ligatures including the double re-plied on the femoral artery - Stitches for some time plaster were then put on a little over next stump made. Great pain was complained of during the procedure. About 8.40 P.M. was 10 minutes after the pain ceased almost immediately, a little pain was felt in the stump and a little in the thigh. I sat by his side until he was taken to the room.

Examination of the joint

The joint was examined, the outer side of the head of the femur commencing with the head - was one at the head of the femur - a pulsation at the apex, perfectly sound - the outer side of the femur was examined towards the periphery of the head of the femur and the joint was found to be perfectly sound.

Facsimile of page from Robert Liston's case-book, describing the first operation under ether anaesthesia. In handwriting of E. Palmer, the dresser.

being removed back ; and this is remembered now one hour after the operation. It was some minutes after being laid in bed before any pain was felt. There is a remembrance of 'something like a wheel going round his leg.'

" 3.30 p.m.—Much pain is now felt in the stump ; the pulse is 90.

" 7 p.m.—The flaps were now brought together, and two more arteries secured, one of which was the small artery running in the centre of the great sciatic nerve, making ten ligatures, including the double one placed on the femoral artery. Strips of isinglass plaster were then put on, making a very neat stump. Great pain was complained of during this proceeding. Pulse 90, and expression of countenance cheerful ; the pain ceased almost immediately on the flaps being brought together and secured." The notes go on to say that examination of the limb showed extensive ulceration and destruction of the knee-joint and surrounding tissues. The patient made the usual tedious recovery common in those days, with offensive suppuration and slow granulation. The ligature on the femoral artery came away on the twentieth day. He was discharged cured on February 11, 1847.

It is the same night, and the scene is Liston's dining-room at 5, Clifford Street, Old Bond Street. He has had a dinner party, and can talk of nothing but the wonderful occurrence of the afternoon. When dessert is about to be removed, he proposes to the company that he shall experiment with William Cadge, his assistant, afterwards the celebrated surgeon of Norwich. So Cadge lies down, and obediently sucks away at the tube of the apparatus which had been brought round from the hospital ; he hears one of the ladies present say, " Liston, I won't stand it ; you'll kill that poor young man " ; and Liston only laughs, and goes on holding down the poor young man by the ears until he is insensible. But, as Cadge tells afterwards, his powerful thumbs were so

strong that he felt the effects of their compression for a long time.

The case of Churchill was one of narcotic anæsthesia, not



Wm. Cadge, F.R.C.S., Liston's assistant. (By permission of *British Medical Journal*.)

of complete insensibility, as it is recorded that the patient spoke and answered questions whilst on the table, although totally insensitive to pain ; but it settled, once and for all, in

this country, the fact that anaesthesia was possible. In rather less than six months it is recorded by Mr. (afterwards Sir) Wm. Ferguson that the novelty of ether anaesthesia for operations belonged to the past.

Once more the scene changes. Not quite a year after Churchill lost his leg under ether, a funeral procession slowly



The last portrait of Robert Liston, taken about beginning of 1847.
(By permission of Colonel Liston.)

climbs Highgate Hill, accompanied by more than 500 medical men and students, friends and pupils of Robert Liston, who has just departed this life, prematurely, at the age of 53, from the effects of an aortic aneurysm, caused by a blow from the boom of his yacht. The service is held in the parish church, the coffin is carried into the adjoining cemetery, and left on the top shelf of one of the arches of the terrace catacomb. There, last autumn, by the light of a

candle, the writer, perched on a rickety ladder, read the following on the half-round closing stone :

" SACRED TO THE MEMORY
OF ROBERT LISTON, F.R.S.
LATE PROFESSOR OF CLINICAL SURGERY
IN UNIVERSITY COLLEGE, LONDON.
MEMBER OF THE COUNCIL OF EXAMINERS OF THE ROYAL
COLLEGE OF SURGEONS OF ENGLAND.
BORN OCTOBER 28, 1794. DIED DECEMBER 7, 1847."

Of him, truly, may it be said :

" Ante diem perit, sed non sine gloria."

BIBLIOGRAPHY, &c.

- (1) Notes on the case of Frederick Churchill in Professor Liston's Case Book taken by the dresser. Edward Palmer, until almost the conclusion, and finished by Edward J. Franklyn, who succeeded Palmer as dresser.
- (2) *Pharmaceutical Journal and Transactions*, vol. vi., pp. 337-8 and 350-52. Here the curious mistake of Ransome, the house surgeon, was made. He giving the date as Friday, December 18, instead of Monday, December 21.
- (3) *The Lancet* for 1847, vol. i., p. 5 *et seq.*, also vol. ii., 1888, pp. 1220-1221 (Dr. Wm. Squire's account).
- (4) *British Medical Journal*, October 17, 1896, account of Jubilee of Anæsthesia; also for July 4, 1903, obituary notice of William Cadge, F.R.C.S.
- (5) "Anæsthesia, Ancient and Modern," a very interesting little pamphlet, published by Burroughs Wellcome and Co.; also much assistance from Mr. C. J. S. Thompson, connected with that firm.
- (6) The various editions of Dr. Dudley Buxton's "Anæsthetics."
- (7) Papers and Scrap-books kindly lent me by Colonel Liston, eldest surviving son of Robert Liston, to whom and to whose wife I am greatly indebted.
- (8) A paper read before the Medical Society of University College Hospital by my friend, Raymond Johnson, F.R.C.S. It was owing to the perusal of this that I was finally persuaded to put together this sketch. Mr. Johnson quite agrees with the observation I made to him that working at the materials of Liston's life makes one feel the same enthusiasm for him which was shown by his students and friends. He was every inch a man, and always to the fore in everything that was of service to the advancement of his profession.

- (9) Letters from Dr. Buckell, of Brighton, who was an actual witness of the operation, and who, like Dr. Duncan, of Harrow, another living witness, speaks in the highest terms of Liston's influence and skill. These two gentlemen, with Lord Lister, are the only surviving witnesses of the operation, so far as I can ascertain.
- (10) *Tradition* — (a) This I received in my youth from my father, the late Frederick Cock, M.D., and my uncle, the late Henry Maund, M.D., both old students at University College Hospital. On one occasion, in particular, I remember these two and several other old friends and fellow students, including Dr. Wm. Squire, meeting at my father's house. Among other reminiscences, the first operation under ether was described at considerable length, each man taking part in it. This made a great impression on me, and it is from the recollection of this talk that I drew this account, modifying it only from the authorities already quoted. (b) Received from Mr. Peter W. Squire, who told me what his father had repeatedly narrated to him. (c) A communication from Dr. Barton, of Kensington, giving the Sheldrake incident, which had been told him by his father, who was present on the occasion. In the course of getting together the materials for this sketch I have come across a good many sidelights on Liston and his surroundings, and, if the Editor will permit me, perhaps I may be allowed to add a note or two more on a future occasion.
- (11) Essays and addresses of the late Sir J. Russell Reynolds, 1896.
- (12) Various editions of Squire's "Companion to the British Pharmacopœia."
- (13) *Transactions of the Medico-Chirurgical Society*, for 1847-48.
- (14) R. S. Surtees' "Hawbuck Grange," late edition. This book has a preface dated October, 1847. On pp. 176-177 is "I see the Sessions are coming on," observed Tom Bowles, "and they are advertising for people to send instructions for indicting prisoners. I wish someone would send instructions for indicting the weather. *Talk about Ether*," added he, "for cutting folk's heads off when they're asleep without hurting of them, I wish they'd etherise me and let me sleep during a frost." Surtees was, of course, the author of the immortal Jorrocks, and the above is the first reference to ether anaesthesia in general literature I have come across.

F. William Cock, M.D., F.S.A.